

EDITORIAL

Author-supported open access in *Estuaries and Coasts*

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ABSTRACT: *Estuaries and Coasts* begins a three-year trial period with this issue in which authors can, by paying an open access fee, have their articles available online to all viewers. Because journals cannot rely of continuing subscription revenues if their articles are already freely available online, open access fees will be expected to cover the costs of production so that the journal will remain financially viable even when subscription revenues are no longer present. Our transition from a subscription-based budget to one in which open access fees cover production costs will include fee discounts for authors who are members of the Estuarine Research Federation and whose institutions have current subscriptions to the journal in recognition that these sources of revenue now support publication of the journal.

The last few years in scientific publishing have been marked by a revolution in how journal articles are delivered to readers and in how professional society and commercial publishers of science journals conduct the financial aspects of their business. *Estuaries* (now *Estuaries and Coasts*) first went online with new journal issues in 1999, and in 2001 made its entire archives available online to Estuarine Research Federation (ERF) members. In 2004, in order to enhance the journal's ability to deliver scientific information, articles became available to all viewers (open access) 5 years after publication, and in 2005, we began to provide open access to a few recently published articles (e.g., the annual H. T. Odum Synthesis essay, the biannual Pritchard award paper, and contributions to our new series Perspectives in Estuarine and Coastal Science). The most recent special issue of the journal (December 2006, Volume 29, Issue 6A) on Hurricane Impacts on Coastal Ecosystems was provided as a completely open access issue to ensure its broad distribution to the scientific community.

In November 2006, the Governing Board of the Estuarine Research Federation approved implementation of a three-year trial period in which authors can have their articles available online to all viewers by paying an open access fee. This author-supported model for open access publication is intended to further the Federation's mission of advancing understanding and wise stewardship of estuarine and coastal ecosystems worldwide by providing enhanced access to the research findings that are published in the journal. In the absence of author payment of an open access fee, the journal article will be available, as it has been, to ERF members and to all persons at institutions with current subscrip-

tions, and 5 years after publication as an open access article in the journal's online archives. As funding agencies begin to support the payment of open access fees by authors, our budget will move from being primarily supported by subscription and membership fees to one supported by author-paid open access fees.

Setting a price for open access is not as straightforward as it might seem since several aspects of the scientific publishing environment must be considered. It is easy enough to calculate costs, in that they are based on editorial office expenses associated with peer review, with editing, composition and layout of accepted papers, with delivery of print and online journal content, and with marketing and other subscriber services. If demand for print versions of the journal changes independently of online access, the costs of printing and distribution will be hard to predict. The rapidly changing publishing world makes other costs harder to estimate. Online distribution costs are especially hard to specify, since there is an ever increasing array of online services associated with online journal articles (search engines, archiving services, embedded links, aggregation of content through other online portals, authentication, usage statistics). It has been estimated that the average page cost in scientific, technical and medical publishing is now about \$325/page. Our estimates for 2006 suggest that a page in *Estuaries and Coasts* costs about \$285 to print and deliver online, although online delivery of the journal is subsidized by the University of Mississippi where I work and the journal largely depends on ERF members, authors and readers to market the journal to their libraries. Other costs, such as those associated with peer

review and some editorial support, are defrayed by volunteers, many of whom are ERF members, making the link between membership fees and journal production costs a real quantity but difficult to estimate. Even if we were to begin a trial period assuming \$285/page was realistic, the constraints imposed by other aspects of the publishing environment also need to be considered.

Among these other constraints is that authors who want their articles to be open access would select a journal to submit their manuscripts to based at least in part on the size of the open access fee. As more and more authors seek journals with an open access option, the competition for authors and manuscripts might force journals to use a loss leader strategy in setting open access fees. By setting open access fees below real costs, a journal could easily attract authors, but risk the long term viability of the journal by not taking in enough revenues to offset costs. If prices are too high, or artificially subsidized by other revenue sources, author selection of open access journals will become the primary driver of journal submission rates, article quality, and eventually, journal revenues. In this way, low fees for open access will encourage submissions but undermine journal viability.

From the journal's perspective, the open access fees must be sufficient to cover all production costs if subscription and membership revenue are no longer available to support the journal's production costs since we assume that institutions will no longer subscribe to a journal once a significant proportion of the journal's articles are available online for free. It is less clear if it is safe to assume that memberships in professional societies will decline as more of the society's journal articles become available as open access articles since there are other benefits of membership. Other revenue sources, such as advertising, are not used by *Estuaries and Coasts*, while unusual production expenses (e.g., color plates) are already paid by the authors.

After considering a range of options, the Governing Board agreed that, in order to maintain the financial viability of the journal, open access fees should cover the complete costs of journal production. The Governing Board adopted a price-per-page model that is intended to be sensitive to the real costs of production (even those associated with inflation and changes in online services), and to the effects of declining subscription revenues and individual memberships. Based on the costs of producing a page in a given year, and adjusted for inflation, the cost of open access in the following year will be sufficient to cover the full expenses of production, but discounted by 1/3 for author

membership in ERF and an additional 1/3 for current subscription to the journal by the author's institutions. In setting the fee in this manner, we want to fairly distribute the expense of papers based on length but to also recognize that author memberships and institutional subscriptions also support the production of the journal. As agencies supporting research become willing to support open access fees, we expect more and more authors to be able to elect to have their papers be open access. As the proportion of papers that are open access increases, we expect that subscription revenues will decline, and there will be fewer authors benefiting from the discounts. The open access fees, without discounts, should cover the full costs of production when subscription revenues are gone.

Here's an example: for a 10-page paper to be printed in 2007, with 3 authors (2 of them being ERF members) from 2 institutions (one institution having an active subscription) the open access fee would be \$2,850 (\$285 per page) less a discount of \$633 for 2 of the 3 authors being ERF members and a discount of \$475 for one of the two institutions being involved having an active subscription to the journal, for a total open access fee of \$1,742. The open access fee for a 10-page paper without membership or subscription discounts would be \$2,850; for a paper with full membership and subscription discounts, the open access fee would be \$950.

I am hopeful that the three-year trial period will help us to make the transition from a subscriber-based model to an author-paid model as more and more research funding agencies, institutions and countries become interested in and financially committed to having work that they support being available as open access articles. The first steps in the process will be evident in the online version of this issue since open access fees for some articles will have been paid, and the articles will be marked in online tables of contents as Open Access articles. The editorial office will keep track of how many times regular and open access articles are downloaded, so that by the end of the first year of the three-year trial, we will be able to advise authors about how open access influences the number of times their article might be viewed. Authors in future years can make more informed decisions about the audience that their open access fee is helping them to reach.

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